

Claims

1. A method for recognizing a dual point user input on a touch based user input device,
comprising
5 forming a first position signal related to a first user input to said input device,
 forming a second position signal related to a subsequent second user input to said input
 device, and
 determining if said second position signal has its source in a simultaneous dual point user
 input.
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2. A method according to claim 1, further comprising:
 generating a third position based on said first position and said second position.
3. A method according to claim 2, further comprising:
15 using said first and third positions, as coordinates of a dual point user input.
4. A method according to claim 1, further comprising:
 using said first position, as a coordinate for a single point user input, and
 using presence of said dual user input for allocating a first function to said first position.
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5. A method according to claim 1, further comprising monitoring said first and second position
 signals, and the gradient of a position signal from said first position to said second position.
6. A method according to claim 2, further comprising:
25 storing said third position.
7. A method according to claim 2, further comprising
 detecting a motion of said second position,
 setting one of said first position or said third position as a point of reference, and
30 calculating a motion of said position that is not said point of reference, by reflecting said
 point of reference on said second position.
8. A method according to claim 5, further comprising receiving a signal indicative if said first
 position or said third position is to be used as a point of reference.
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9. A method according to claim 1, wherein said determination, if said second position has its
 source in a simultaneous dual point user input, is based on at least one boundary area defined

by possible input options and said first position, wherein dual point user inputs are excluded if said second position is not detected to be within one of said boundary areas.

- 5 10. A method according to claim 9, wherein said boundary area is a half edge distance area from said first position.
11. A method according to claim 1, further comprising setting a dual point user input flag, if said second position input has its source in a dual point user input.
- 10 12. A method according to claim 11, further comprising:
 using said second position as the actual position of a single point user input, if said dual point user input flag is set and if it is determined that said second position has its source in a simultaneous dual point user input.
- 15 13. A method according to claim 2, further comprising displaying an indication that the dual point user input is used.
14. A method according to claim 2, further comprising:
- setting said second position as the new position of an actual single point user input, if said
20 second position input has not its source in a dual point user input.
15. A method according to claim 1, wherein said input device is capable of only outputting a single input position signal that depends on the actual user input.
- 25 16. A method according to claim 1, further comprising storing said first position signal.
17. A method according to claim 1, wherein said second position is differing from said first position.
- 30 18. A method according to claim 1 further comprising:
 forming a fourth position signal related to a subsequent third user input to said input device, and
 determining if said fourth position signal has its source in a simultaneous triple point user
input.
- 35 19. A method according to claim 17, further comprising
 generating a fifth position based on said first position and said second position, and

using said first and third and fifth positions, as the coordinates of said triple point user input.

20. A method according to claim 17, further comprising

using said first position, as the coordinate for a single point user input, and
using the presence of said a simultaneous triple point user input for allocating a second function to said first position.

21. A software tool comprising program code means stored on a computer readable medium for carrying out the method of claim 1, when said software tool is run on a computer or network device.

22. A computer program product comprising program code means stored on a computer readable medium for carrying out the method of claim 1, when said program product is run on a computer or network device.

23. Computer program product comprising program code, downloadable from a server for carrying out the method of claim 1, when said program product is run on a computer or network device.

24. A touch based input device controller for a touch based user input device, wherein said input device is only capable of outputting a single input position signal that depends on the actual user input, comprising,

an input connectable to said touch based user input device to receive successive position signals each representing a position on said touch based user input device, which a user has touched,

a memory, connected to said input, to store at least one of said position signals,

a differentiator to detect time dependent transition properties between two different successive positions,

a first evaluation circuit connected to said differentiator to determine, if a position following a preceding position is caused by a single point user input or by a dual point user input,

a second evaluation circuit, connected to said input, said memory and said first evaluation circuit, wherein said second evaluation circuit is generate a dual point on basis of said successive positions, and

an output, connected to said second evaluation unit, connectable to a processing unit.

25. A touch based input device controller according to claim 24, further comprising, an input connected to said second evaluation unit, connectable to a processing unit to receive control information from said processing unit to control the operation of said second evaluation unit.
- 5 26. An electronic device comprising a touch based input device, a processor and controller connecting said touch based input device to said processor, characterized in that said controller is a controller according to claim 24.
27. An electronic device according to claim 26, wherein said device is a mobile terminal device.